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ABSTRACT

This booklet synthesizes principles of motivation that have emerged from research examining the effect of motivational practices on school learning. It addresses achievement motivation, intrinsic motivation, goal orientation, and the effect of teacher practices on the promotion of motivational beliefs, motivation strategies, and willpower. It also recognizes the need for teacher practices that target socioemotional goals. The booklet focuses on two 11-year-old students, Stefano and Sandra, who attend school in different parts of the world. Stefano is the son of a car mechanic in rural southern Europe. Sandra is the daughter of a road worker in a big South American city. The booklet describes these children's thoughts, feelings, and actions, illustrating the various constructs described in the research sections. It addresses eight principles: motivational beliefs act as favorable contexts for learning; unfavorable motivational beliefs impede learning; favorable motivational beliefs facilitate learning; students who are mastery oriented learn more than students who are ego oriented; student expect value for effort; students need encouragement and feedback on how to develop motivational strategies and how to develop willpower; and students are more committed to learning if objectives are compatible with their goals. (Contains 20 references.) (SM)

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Motivation to learn

By Monique Boekaerts

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Preface

This booklet explains principles that encourage children to learn and has been prepared for inclusion in the Educational Practices Series developed by the International Academy of Education and is distributed by the International Bureau of Education and the Academy. As part of its mission, the Academy provides timely syntheses of research on educational topics of international importance. This booklet is the tenth in the series on educational practices that improve learning. It opens a new door, however, since it focuses on behaviour rather than academic learning.

The author of this booklet, Monique Boekaerts, began her career as a teacher but decided to take up the study of psychology to understand better what went on in the minds of her students. She is a full professor at Leiden University in the Netherlands and has published over 120 papers and book chapters on motivation and self-regulation. She set up collaborative innovation programmes with the school-management and teachers of large vocational schools. Together with Teaching and School Management Consultants (TSM) she coaches the change processes that are currently taking place in vocational education. Professor Boekaerts has served as president of the European Association for Research in Learning and Instruction.

The officers of the International Academy of Education are aware that this booklet is based on research carried out primarily in economically advanced countries. The booklet, however, focuses on aspects of learning and behaviour that that may be found in most cultures in varying degrees. The principles presented here are likely to be generally applicable and useful throughout the world. Even so, the principles should be assessed with reference to local conditions, and adapted accordingly. In any educational setting, nation or culture, suggestions or guidelines for practice require sensitive and sensible application, and continuing evaluation.

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Introduction

In the last forty years, researchers have studied student motivation and have learned a great deal about:

- What moves students to learn and the quantity and quality of the effort they invest;
- What choices students make;
- What makes them persist in the face of hardship;
- How student motivation is affected by teacher practices and peer behaviour;
- How motivation develops;
- How the school environment affects it.

Most of the motivation research focused on well-adjusted students who are successful in school. However, successful students differ from their less-successful peers in many ways. For example, they often have clear ideas of what they want and do not want to achieve in life. Moreover, they perceive many learning settings as supportive of their own wishes, goals and needs, and react positively to the teacher's motivational practices.

This booklet is a synthesis of principles of motivation that have emerged from research into the effect of motivational practices on school learning. It addresses more traditional aspects, such as achievement motivation, intrinsic motivation and goal orientation, as well as the effect of teacher practices that promote motivational beliefs, motivation strategies and willpower. It focuses on learning goals and the effect of motivation on the pursuit of these goals, whilst recognizing the need for teacher practices that target socio-emotional goals as well.

Much of the research supporting the principles specified in this booklet stems from studies that investigated the association between motivation (seen as a student characteristic) and learning outcomes. Other principles have their origins in the theory of self that children and adolescents themselves develop through the years. Still other principles are based on research that showed how the opportunities that teachers and schools provide for learning and personal development (instructional procedures, teacher behaviour and classroom climate) are congruent or in conflict with the students' needs and goals. Priority was given to those principles that teachers can apply in their classrooms. It is the aim of this short introduction to motivation to make teachers aware that youngsters'

psychological needs change continuously. They change not just as a function of their developing knowledge and expertise in a particular subject-matter domain, but also in relation to their emerging theory of self in relation to that domain.

In this booklet, the reader will get to know two youngsters, namely Stefano and Sandra, who are both 11 years old and are attending school in different parts of the world. Stefano is the son of a car mechanic. He goes to school in a rural area in the south of Europe. Sandra is the daughter of a road worker. She attends school in a big city in South America. It is my intention to describe the thoughts, feelings and actions of these two children in order to provide an illustration of the various constructs described in the research sections. I hope that teachers will perceive these students' developing values, interests and goals as similar to what they actually observe in their own classrooms.

The eight principles addressed in this booklet are meant to be understood as pieces in a jig-saw puzzle that fit together to provide a coherent, comprehensive picture of how to provide a powerful environment for motivation strategies to develop. If you want to find out more about these eight principles, or about a specific principle, you can consult the literature on motivation. References are provided in relation to each principle.

1. Motivational beliefs

Motivational beliefs act as favourable contexts for learning.

Research findings

In the classroom the content covered and the social context vary continuously. Hence, children are frequently involved in unfamiliar learning situations. This may create ambiguity and uncertainty for some students and challenge for other students. Students try to make sense of novel learning situations by referring to their motivational beliefs. Motivational beliefs refer to the opinions, judgements and values that students hold about objects, events or subject-matter domains. Researchers have described the beliefs that students use to assign meaning to learning situations. A specific set of motivational beliefs pertains to the value students attach to a domain. For example, Stefano often says: 'I cannot see what I can possibly learn from reading poetry;' while Sandra states: 'Reading poems is the nicest activity we do at school.'

Motivational beliefs also refer to the student's opinion of the efficiency or effectiveness of learning and teaching methods (Stefano: 'Why do we always have to work in groups? I can learn better when I work alone'). Beliefs about internal control can be distinguished into self-efficacy beliefs and outcome expectations. Self-efficacy beliefs are opinions that students hold about their own ability in relation to a specific domain (Stefano: 'I believe that I am good at solving this type of mathematics problem;' Sandra: 'I am not a star in math, but I know how to analyze a reading text'). Outcome expectations are beliefs about the success or failure of specific actions (Stefano: 'I have been working at this grammar task for a long time and I still cannot get it right. I am certain I will not be able to come up with an acceptable solution').

Research has indicated that motivational beliefs result from direct learning experiences (e.g. Sandra: 'Most math problems are too difficult for me to get them right the first time. However, when somebody gives me a hint I can solve a lot of problems'),

observation learning (e.g. Stefano: 'The math teacher gets annoyed when students do not offer help to each other'), verbal statements by teachers, parents or peers (e.g. Sandra: 'My father thinks it is nonsense to learn poetry in school; he says mathematics is far more important') and social comparisons (e.g. Stefano: 'Why do I always get scolded, while the teacher never says anything to other students?').

Motivational beliefs act as a frame of reference that guides students' thinking, feelings and actions in a subject area. For example, motivational beliefs about mathematics determine which strategies students think are appropriate to do specific tasks. It is noteworthy that a student's beliefs about a domain may be dominantly favourable (optimistic) or unfavourable (pessimistic), thus providing a positive or negative context for learning. Once formed, favourable and unfavourable motivational beliefs are very resistant to change.

Motivating your students

As teachers, you should have a good idea of the motivational beliefs that your students bring into the classroom. It is important that you are aware that your students may already have formed favourable or unfavourable beliefs about a topic before they come into class. Knowledge about your students' motivational beliefs will allow you to plan learning activities that make good use of their favourable motivational beliefs and prompt them to reconsider unfavourable beliefs. Students are very successful in hiding their thoughts and feelings, leading to misconceptions about their values, self-efficacy beliefs and outcome expectations.

The set of principles addressed in this booklet will hopefully provide more insight into students' motivational beliefs and into the way these beliefs affect their involvement, commitment and engagement in the life classroom. Knowledge of these principles will, I hope, act as guidelines for helping students to establish favourable motivational beliefs and unmask unfavourable beliefs.

References: Pintrich, 2001; Skinner, 1995; Stipek, 1988; Vermeer, Boekaerts & Seegers, 2000.

2. Unfavourable motivational beliefs impede learning

Students are not motivated to learn in the face of failure.

Research findings

Fear of failure does not automatically lead to passivity or avoidance. What matters are the motivational beliefs that have been attached to a subject-matter area. For example, Stefano has dominantly favourable beliefs about mathematics and unfavourable beliefs in relation to language learning. Domain-specificity of motivational beliefs implies that a student may be failure-oriented in some domains and not in others. Stefano no longer perceives a relationship between what he can do (his actions) and the outcomes of his actions (success or failure) in the language domain. He feels uncertain, stating that he is unable to perform the tasks well. Students give different reasons for their success or failure in various school subjects and these reasons are consistent with their self-concept of ability in that domain. The main reasons Stefano gives for his poor performance in languages is his lack of ability. Other frequently used excuses for poor performance are lack of effort (Sandra: 'I did poorly in history today because I did not put in a lot of effort'), bad luck (Stefano: 'I was unlucky that I was called upon first to consider that question'), inadequate strategy use (Stefano: 'I solved the math problem correctly, but I did not know that we had to write down the solution steps as well') and task characteristics (Sandra: 'The math problem was just too difficult'). Children who view poor performance as the result of low ability expect failure to occur again and again. These students experience negative thoughts and feelings (e.g. Sandra: 'I am the only one with seven mistakes. The teacher will not like me because I am a dumb kid'). Negative thoughts that are repeatedly associated with a task or activity become attached to similar learning situations. As such, a whole domain may be categorized as 'too difficult' or 'threatening'. Once these unfavourable motivational beliefs have become part of a

student's theory of self, they will be activated again and again, creating doubt and anxiety. Unfavourable beliefs impede the learning process because they direct the learners' attention away from the learning activity itself, focusing it instead on their low ability. Even though children's understanding of causality changes with age, their beliefs about the cause of their successes and failures in a particular domain are very resistant to change.

Motivating your students

Students who state that they will never be able to complete the task successfully signal to you that they no longer perceive a link between their actions and a positive outcome. You can help them to re-establish the link by creating learning situations where they can experience success. However, it is not sufficient that they get the correct solution. They also need to understand why the solution plan was correct and what they can do (actions) to improve their skill further. Your students' attention has to be drawn explicitly to the link between their actions and the outcome of their actions by asking questions such as: 'What did you do to get that solution? How do you know that the strategy you used is effective? Would this strategy work for the following problem as well? Why or why not?'

Paradoxically, students who have established unfavourable motivational beliefs are not interested in such process-oriented feedback. They only want to know whether their answer is correct, or whether they are on the right track. Try to be alert when your students request outcome-related feedback. Focus on what they have already mastered (e.g. 'Stefano, you got three correct. That is better than yesterday.') rather than on their shortcomings. Better still, point out the strengths of their solution plan. Such process-oriented feedback gives them a feeling of progress, which is necessary to build up a positive identity as a successful learner. Gradually stimulate them to reflect on their own performance (self-assessment). For example, encourage Stefano to verbalize why the corrected sentence conveys his message better.

References: Covington, 1992; Stipek, 1988; Turner & Meyer, 1998; Vermeer et al., 2000; Ryan, Gheen & Midgley, 1998.

3. Favourable motivational beliefs facilitate learning

Students who value the learning activity are less dependent on encouragement, incentives and reward.

Research findings

Students are more interested in doing activities for which they think they have the necessary competence, or that they value (e.g. Stefano: 'I like math because it is easy, and I need it to become a space engineer', or Sandra: 'I don't like math, but I do my best because my dad tells me that it is important'). Students who value new skills have established favourable motivational beliefs. The chances are good that they are interested in opportunities to practice these skills. It is important to distinguish such commitment from mere compliance with the teacher-set goals. Many students complete tasks that they do not value all that much simply because they expect some sort of reward (e.g. high marks, a pass, or social approval). Students who undertake learning tasks purely for the sake of getting a reward from others, or in order to avoid some penalty, are extrinsically motivated (e.g. Stefano: 'I hate grammar exercises, but my mother prepares my favourite meal when I have to study for a test'). An activity is generally considered to be intrinsically motivating if external reward is not necessary for students to initiate and continue that activity. Favourable motivational beliefs are attached to the activity itself. Students who are intrinsically motivated will report that they do not have to invest effort and that doing the activity is gratifying (e.g. Sandra: 'when I am writing poetry or stories for the school bulletin, I lose track of time'). When difficulties arise, these students will persist with the activity because they experience a feeling of self-determination.

Motivating your students

Unfortunately, not all students are intrinsically motivated and you also have to cater to those students who are less motivated to learn. It is important to realize that classroom climate and the way you interact with your students facilitates or impedes

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their motivation. Try to make tasks and activities meaningful for your students by referring to the intrinsic value of the task and to potential applications in other subject areas and outside school. How can you help your students to develop favourable motivational beliefs? Translate the curriculum in terms of the skills that your students find relevant and interesting. Find out what their current interests and future career goals are (e.g., Sandra wants to become a nurse and Stefano wants to become a space engineer). Show a video, a newspaper cutting, or tell a story, highlighting the importance and functional relevance of new content and skills. Ask students who are already motivated to explain why they value these new skills. Alternatively, ask your students to interview their parents, other teachers in school or older students to find out when they use the new content or skills. These activities will catch your students' attention and curiosity. This is already half of the motivation story. The other half is holding their interest. It is important that students perceive an optimal match between perceived demands and their current capacity. Allow them to adapt exercises according to their current capacity. For example, Stefano gets bored when math problems are too easy. Do not force him to cover the content of the lesson at the same pace, or in the same way, as the slower learners. Also, encourage students who find a math problem too demanding, to redesign it in such a way that it becomes less threatening (e.g. Sandra: 'Can I do this math problem together with Claudia?'). Allowing students to adapt a learning activity to their own psychological needs gives them a feeling of autonomy and self-determination. Denying them this right will be interpreted as external pressure to comply.

References: Bruning & Horn, 2000; Guthrie & Solomon, 1997; Ryan & Deci, 2000; Stipek, 1988; Turner & Meyer, 1998; Wlodkowski & Jaynes, 1990.

4. Students' beliefs about goal orientation

Students who are mastery-oriented learn more than students who are ego-oriented.

Research findings

An important motivational belief that has not been discussed so far is goal orientation. The way students' orient themselves to learning tasks within a domain is a strong indicator of their engagement and performance. Students who learn because they want to master a new skill use more effective learning strategies than students who are ego-oriented. The latter students engage in learning tasks with the intention to demonstrate success (approach ego-orientation) or to hide failure (avoidance ego-orientation). The motivation process of mastery-oriented students differs from that of ego-oriented students in many ways. For example, Stefano shows mastery-orientation in relation to the math domain and ego-orientation in relation to language domain. He starts on his math homework before dinner because he wants to find out whether he can solve the problems. He is prepared to invest effort because he values mathematics and enjoys improving his math skills. When Stefano meets obstacles while doing math, he asks himself: 'How can I make it work?' He is not ashamed that others hear about his mistakes. On the contrary, he always volunteers to show his solution plan, because he appreciates the feedback he gets. In contrast, Stefano does not want others to find out that he made many spelling and grammatical mistakes in a text.

Sandra also values mathematics but for different reasons. She is ego-oriented in math class. She wants to demonstrate success to change other people's opinion about her math ability. Sandra invests effort in math as long as she feels confident that she can find the correct solution. She gives up when she spots mistakes, because she believes that there is only one correct solution. These beliefs fuel her fear that others will use her mistakes as proof of her math ability.

Two research findings should be reported here. Firstly, students display a dominant goal orientation (ego or mastery) by the time they are in second grade, and striving for ego-orientation goals becomes more dominant as children proceed through primary school. They become progressively more concerned with their self-worth, express more concern for peer-status and avoid doing things that the group rejects (fear of alienation). By the fourth grade, avoidance ego goals (e.g. wanting to hide mistakes) have already assumed a prominent position. A second finding shows that teachers set up dominantly competitive or co-operative learning settings in class. Teachers who highlight evaluation procedures, give public feedback, frequently make social comparisons and refer to individual abilities create a competitive atmosphere and elicit ego-oriented thoughts and feelings.

Motivating your students

The extent to which you succeed in creating a mastery-oriented learning setting is an indication of your professional competence. You can play down ego-orientation by explaining to your students that you are not interested in seeing one correct outcome, but that you focus instead on their attempts to come up with a solution strategy. Students will only believe this 'trying is more important than the product' statement when you act according to what you preach. In other words, provide feedback with respect to the solution plan, encourage students to exchange information about the strategies they used and allow them to learn from their mistakes. This is a difficult job since ego-oriented students get annoyed when they have to reflect on their mistakes. By using supportive comments that highlight their involvement, progress and effort you will convince them that you value their attempts to solve problems, particularly when they reflect about what did not work out and why. Mastery-orientation will develop when these students take pride in finding parts of a solution and in catching errors in progress.

References: Elliot, 1999; Niemivirta, 1999; Pintrich, 2001; Turner & Meyer, 1998; Vermeer et al., 2000.

5. Different beliefs about effort affect learning intentions

Research findings

Students decide how much effort they will allocate to a learning task on the basis of their self-concept of ability and their effort beliefs. Young children are notorious over-estimators or under-estimators of their own performance. They may rate themselves among the best of their class, even though their performance is absolutely below the mark. Young children have a rather naïve theory of effort. They believe that if they want something badly enough and do their best to accomplish it, they will be valued for their effort. In other words, they think they have control over the learning situation and keep their high expectations of success even after repeated failure. Their conceptualization of effort as the most important explanation of their successes and failures is a strong motivator to keep practicing.

However, as students get older, the messages they receive from parents and teachers change gradually. More emphasis is put on their ability as a major source of success and failure than on their effort. Children learn to take into account their actual experiences and evaluative feedback from others. They also engage in social comparisons with their peers. This implies that their domain-specific self-efficacy beliefs become more accurate and realistic. Simultaneously, they link these beliefs to their emerging theory of effort. By the age of 9, children seem to have lost confidence in effort as the overall source of success. Research evidence is clear: domain-specific self-efficacy beliefs influence effort investment, and not the other way round. Students like Stefano, who believe that they are good in mathematics, are willing to invest effort to acquire math skills, but they do not necessarily invest more observable effort. Their task-engagement is fundamentally different from that of students

who believe they lack efficiency. More specifically, these students use adequate cognitive strategies that lead to good results. Students like Sandra, who believe that their math skills are deficient, may also invest effort in mathematics. However, they do a lot of things that are ineffective, such as sitting and sighing in front of their books, copying a lot of exercises, rereading several pages. This type of effort creates anxiety and frustration and leads to poor performance. Research has shown that teachers can coach students to develop their effort beliefs. Interestingly, teachers who coach effort are rewarded by enhanced intrinsic motivation.

Motivating your students

Teacher observations confirm that students develop a threshold for declaring whether or not they have put in sufficient effort to reach the learning goal. They use specific stop rules. For example, Sandra may say: 'I have worked for more than an hour now. This must be sufficient for my math homework', or 'I have worked harder for mathematics than for history'. Stefano may justify thus: 'I don't have to work hard for math, I just do the exercises and it usually works out well', or 'I have worked longer than any of my friends to write a good text—this must be sufficient'.

In general, students' theory of effort is underdeveloped. They need assignments to build up domain-specific effort beliefs and to be encouraged to update these beliefs as their skill develops. When you encourage and value effort, your students will begin to view themselves as responsible for their own learning. It is essential, however, that you provide your students with adequate feedback. A good way to start is by providing assignments that require students to predict the effort needed to do a task. After finishing the task, students could be asked to reflect on the invested effort. Was it sufficient or superfluous, and why? Once students get into the habit of reflecting on their effort, they are better equipped to self-regulate their own learning.

References: Boekaerts, 1997; Covington, 1992; Pintrich, 2001; Wlodkowski & Jaynes, 1990; Ryan & Deci, 2000.

6. Goal setting and appraisal

Students need encouragement and feedback on how to develop motivational strategies.

Research findings

Students who define teacher-set goals in terms of their own reasons for learning create a commitment to a desired end-state. Their goal-setting process differs fundamentally from that of students who merely comply with the teacher's expectations. Recent findings indicate that learning goals that are agreed upon jointly by the students and the teacher have a better chance of being accomplished. Such an agreement reflects the intention of both parties to invest effort.

Setting a learning goal refers to the selection of a motivation strategy that fits the actual learning situation. This strategy consists of active attempts on the part of the learner to activate favourable motivational beliefs, to pay attention to relevant cues in the learning environment, and to ignore cues that are distracting from learning. Students who take the time to appraise learning situations in terms of their own goals discover desirable and undesirable end-states. For example, Stefano hated all exercises in which he had to use a dictionary. However, recognition of desirable outcomes of a language activity was a turning point in his attitude. His teacher recommended that he send a letter to a Scottish boy who wants to become a space engineer. Stefano's favourable appraisal of the pen-pal context and the anticipated desirable outcomes (getting an answer) turned him from a passive language learner into an active one. He learned to pay attention to positive outcomes and ignore undesired end-states (spelling mistakes), and he discovered the power of writing as a tool for communication.

Students who begin the learning process by activating favourable beliefs, particularly mastery-orientation and self-efficacy beliefs, need less encouragement from others to get started. Moreover, favourable motivational beliefs draw students' attention to cues in the environment that elicit further interest and confidence in their own capacity to do the task.

Motivating your students

Within the context of the classroom, the teachers' main goal is to get through the syllabus. Most teachers still overrate their students' capacity to set their own learning goals. Hardly any time or effort is devoted to obtaining the students' opinions about the relevance and value of the learning tasks. Consequently, students can motivate themselves for out-of-class activities but do not have a clue about how they can motivate themselves for their schoolwork. Yet, in the goal-setting phase, students lay the foundation for further learning and for the development of interest. What can be done to encourage your students to develop motivation strategies? The goal-setting process can be facilitated by asking students to stop and think about why a particular learning task is important, relevant, fun, boring, challenging, difficult or easy. Why are they confident (or doubtful) about their own skills to do a task, and what triggers their doubt or confidence? When students have completed a task they can reflect on their original appraisal of the task again. Ask them to formulate in their own words whether their appraisal of the task has changed and why. By asking your students to reflect on their initial competence and relevance judgements in relation to different learning tasks and about their initial outcome expectations, you create a favourable classroom climate for goal setting. Your students will feel free to make their appraisals explicit and open for discussion, raise questions about their own and other students' motivation for learning, and learn from each other. If you show interest in the reasons why your students consider some topics as their favourites while others find these topics boring, both you and your students will gain information about what makes motivation strategies work.

References: Boekaerts, 1997; Boekaerts, 2001; Niemivirta, 1999; Turner & Meyer, 1998; Vermeer, et al., 2000.

7. Striving for goals and willpower

Students need encouragement and feedback on how to develop willpower.

Research findings

Good intentions that were strong in the goal-setting stage do not automatically lead to goal accomplishment. Many learning goals need active striving on the part of the learner in order to be accomplished, meaning that effort needs to be invested. Effort refers to an intentional act that increases commitment to a task, such as increasing attention, concentration and the amount of time spent on a task, or by doing specific activities (e.g. re-reading, rehearsal, underlining, paraphrasing, copying). However, effort often declines when a task gets more complex or less interesting, when obstacles are encountered, or when students are distracted by competing activities. At such a point, they need willpower to sustain attention and effort.

Parents and teachers alike view persistence as an important aspect of willpower. Yet, research has shown that persistence is not necessarily a virtue. Some students try the same strategy again and again in order to complete a task (high persistence) while others discard a strategy at the first sign of failure (low persistence). Results from recent studies suggest that two important learning strategies should be implemented. The first strategy deals with the students' capacity to initiate a solution plan without too much hesitation. The second strategy deals with the students' capacity to judge whether it is fruitful to continue with a solution plan (persistence), or whether it is better to give it up because it will lead nowhere (disengagement).

Before initiating a learning activity, students should orient themselves to the learning task in terms of its purpose and possible solution plans. Effective decisions to persist in the goal-striving stage are based on this knowledge. Students who have a good conception of the learning goal and also have access to a repertoire of strategies to generate an adequate solution plan

use their effort constructively. They can judge which strategies are useful and also monitor whether the selected strategies are effective to reach the goal. If they notice that a chosen strategy is not effective, they can select a new one and test whether it is more effective or else disengage from the task because they judge that effort is no longer fruitful (e.g. not enough time or resources). Students who have a misconception of the goal or lack adequate strategies may also persist, but their effort is largely undirected. For example, Sandra often tries several solution plans blindly when she is doing her math homework in the hope that one will work.

Motivating your students

How can you help your students to develop willpower? First of all, you should not be misled by observed effort. When effort investment is high (or low), you still need to know why that is the case. In order to be able to interpret student initiative, persistence and disengagement meaningfully, you need to have a good idea of the way your students perceive the learning goal and also of how much effort they need to invest to reach it. Students should be given plenty of opportunities to practice striving for goals. You can coach this process by reminding them to set a series of sub-goals and to compose a checklist that will help them to monitor, assess and reflect on the quality of their engagement and commitment during the solution process.

Reflecting on the goal-striving process implies that students should raise questions about the resources that are necessary and sufficient to reach various sub-goals. For example, Stefano may ask himself: 'Do I have sufficient time to finish my history homework before dinner if I reread every section twice and make a brief summary?' Post-activity reflection about effort investment is essential to make students aware of their attempts at effort management and of the reason why they did not exercise willpower. By asking your students to compare and contrast the amount and type of effort invested in various tasks, you can help them to develop their theory of effort, and at the same time allow them to gain insight into their own willpower.

References: Boekaerts, 1997; Boekaerts, 2001; Corno & Randi, 1997; Niemivirta, 1999; Skinner, 1995.

8. Keeping multiple goals in harmony

Students are more committed to learning if the objectives are compatible with their own goals.

Research findings

Teachers, educators and parents are convinced that acquiring new knowledge and skills is the most important goal that students should strive for in a school context. The reality is different. Youngsters do not consider the learning goals set by the teacher as the most salient goals in their life. They pursue many other goals as well. For example, they want to be treated fairly, build up a network of friends, learn more about their favourite topics and discuss romantic partners. These personal goals play a crucial role in motivation processes by defining their content, direction and intensity. Recent evidence suggests that students are more motivated towards their schoolwork when school-related goals are in harmony with their own wishes, needs and expectations. For instance, Sandra adores her teacher and uses her as a role model because she acknowledges that Sandra wants to become a nurse and frequently relates schoolwork to this important goal. Students who note that the teacher acknowledges their personal goals accept the teacher's goals more easily. By contrast, students who realize that their personal goals are ignored, or even thwarted, rebel against the system and consider the curriculum as alien to their 'real' life.

Teachers and parents often complain that students do not adopt the goals they hold for them, and that they do not follow up on their well-meant advice. For example, Stefano's father tries to prevent him from doing his homework with the radio on, believing that music affects motivation and performance negatively. Current research does not support this view. Yet, such conflicts of interest lead to the frustration of Stefano's need for autonomy. Often, teachers (and parents) try to push their own goals along, thus fueling the child's struggle for autonomy. For decades, schools, teachers and researchers narrowed educa-

tional goals to learning and achievement, which only frustrated students' social goals.

Motivating your students

Students bring their own goals into the classroom and want to negotiate with you about how, when, and with whom they want to reach the learning goals. It is important to realize that you impose many goals on your students, including social goals (e.g. 'You have to work individually, without the support or help from your peers'; or 'You have to work in small groups and take responsibility for the learning of members of your group'). Peers also impose goals on other students (e.g. 'Ignore the teacher when he asks for volunteers'). When students realize that their own goals are discordant with your goals, they make attempts to align the curricular goals with their own goals. For example, Sandra may ask: 'Can I hand in my homework tomorrow because I did not have enough resource material to make a good job of it?' Similarly, Stefano may request: 'Can I do this task alone, because I have a different opinion than the rest of my group?' If you grant these requests, your students will experience self-determination. The positive cognitions and feelings that are part of that experience will further the learning process. On the contrary, if you deny these requests, they will experience a conflict of goals and may not take responsibility for achieving the curricular goals. Many forms of misbehaviour in class can be interpreted in terms of a goal conflict. You will deal more flexibly with misbehaviour when you view it as a signal that a salient goal is being frustrated. For example, Stefano may say: 'How can I work efficiently on a math problem if you want me to help students who always run into problems?' Likewise, Sandra may ask: 'Why can't we do this task together?' It is important to realize that your students want to be treated with respect. They expect you to explain why you turn down their requests.

References: Boekaerts, 1998; Boekaerts, 1999; Maehr, 1984; Wentzel, 1996.

Conclusion

It is often stated that bad teaching kills motivation and that good teaching brings out the best in students of all ages. If you want to encourage your students to become their own teachers and develop independent learning skills, you need to know about the principles that guide motivated learning. The eight principles that are addressed in this booklet apply to children and adolescents from different countries and different cultures. I described the principles in such a way that you gain insight into the reasons why students are or are not motivated to learn in the context of the classroom. However, you still need to adapt these principles to the local context of your classroom. I focused on two primary school students, Stefano and Sandra, and referred to their thinking and feeling in relation to the mathematics and language domains, yet the principles do not refer to particular curricula or specific age groups. Rather, they refer to generic aspects of motivated learning that cut across school subjects, grade levels and types of education. They focus on the students' beliefs, opinions and values and how these motivational beliefs affect learning. Knowledge of your students' motivational beliefs will help you to create learning environments that are well suited to their psychological needs. The capacity to listen to your students and observe their behaviour in the live classroom will help to inform you of what they find interesting, challenging, boring and threatening, and why they have this opinion. Willingness to negotiate with your students and grant them autonomy will convince them that you are truly interested in how and why they learn. A good way to start your observations is by selecting one or more students in your class who think, feel and behave somewhat like Stefano or Sandra. Observe these students in the next few weeks and discover how the eight motivational principles that are described in this booklet work in *your* classroom.

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NOTES

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